

**A Follow-Up to  
The California Department of Transportation:  
SSTI Assessment and Recommendations**

**State Smart Transportation Initiative  
December 2014**

The State Smart Transportation Initiative (SSTI) promotes transportation practices that advance environmental sustainability and equitable economic development, while maintaining high standards of governmental efficiency and transparency.

SSTI, housed at the University of Wisconsin, operates in three ways:

- As a community of practice, where participating agencies can learn together and share experiences as they implement innovative smart transportation policies.
- As a source of direct technical assistance to the agencies on transformative and replicable smart transportation reform efforts.
- As a resource to the wider transportation community, including local, state, and federal agencies, in their efforts to reorient practice to changing social and financial demands.

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## Table of Contents

Introduction.....	1
Findings .....	2
Four early action items.....	3
Other achievements.....	5
Improved response to community needs and state planning goals .....	5
Improved organizational processes, structure, and capacity.....	7
Improved partnering to achieve department and state goals.....	9
Improved communications.....	10
Recommendations.....	12
Maintaining momentum with CIP .....	12
Continuing to improve the organization .....	13
Continuing to improve practice and outcomes .....	14
Acronyms and Abbreviations .....	19
References.....	20
Appendix.....	21

## Introduction

In January 2014, the State Smart Transportation Initiative (SSTI) delivered “The California Department of Transportation: SSTI Assessment and Recommendations.” That report, commissioned by the California State Transportation Agency (CalSTA) and produced by a team of former DOT executives and others from around the country, both critiqued some Caltrans practices and praised the openness and creative thinking of the staff who participated in the review. The latter seemed key to improving the former.

This report, also commissioned by CalSTA, provides a progress update on what CalSTA and Caltrans have come to call the “Caltrans Improvement Project” (CIP), in which SSTI’s team has participated as advisers. The purpose is to acknowledge successes—and there have been significant successes—and to recommend approaches to meeting remaining challenges. The January report contained a wide range of recommendations in 10 areas. This report does not seek to add to that list but rather to broadly assess CIP’s progress in modernizing the department and to provide recommendations for continued implementation. A companion document prepared by Caltrans gives details on specific work around each of the original recommendations.

The team bases its findings in this report largely on its experience participating in CIP meetings, but also on interviews with leaders of that effort from the agency and department, as well as with several outside stakeholders. As in the original report, to preserve candor in discussions, this report does not name individual sources except where statements are already public or where individuals provided information for attribution.

In this document we assess progress on issues raised in the original report, but we note that some actions we cite would have taken place regardless of that report because Caltrans was undertaking a variety of reforms when SSTI arrived in 2013. For example, a department-initiated program review in 2012 spurred the creation of a risk-management effort that addresses culture change and other issues also raised in our report and in the implementation discussions that followed. Other actions, such as the revision of the department’s mission and objectives, were probably catalyzed by the SSTI report. In this document we discuss actions related to issues in the January report, regardless of their origin.

Finally, one of the key findings in the original report was that several previous reports and plans, including Caltrans’ own long-range plan and its own Smart Mobility 2010 report, had insufficiently affected the department’s strategy and decision-making. It was our hope that the January report would not join them on the shelf, and we have been gratified to be part of the initial implementation effort. All parties agree that the work has only begun, however, so it will be critical for CalSTA and Caltrans to continue to expect and track progress. Continued agency attention, which has been a positive outcome from the change in state governance that separated transportation from other agency functions, would seem to be key in bringing outside perspectives into the department and assessing progress from an arm’s length. While most of the person-hours expended on CIP work have been by Caltrans staff, in this report we treat CIP and modernization in general as a joint agency-department endeavor.

## Findings

*“Caltrans isn’t just responsible for the state highway system. We are providing leadership on a comprehensive California transportation system—one that provides our state’s residents and visitors with an integrated system connecting regions and communities and moving people and goods as efficiently as possible. This multimodal system will meet mobility needs of all Californians in a sustainable way.”*

*– Caltrans Director Malcolm Dougherty<sup>1</sup>*

California is the largest and most complex state in the nation. Caltrans and its predecessor departments have been responsible for planning, building, and operating the state’s backbone transportation system for over 100 years, during a time of great population and economic growth and environmental challenges. Over the last quarter century the political, social, and economic framework for making transportation and local development decisions has become more complicated as the relative roles of local, regional, state, and federal governments and special agencies have changed. Public needs and expectations have evolved as well, as have the built environment and goods movement patterns. Caltrans must augment the strategies, tools, and skill sets that worked in the 20<sup>th</sup> Century to be successful in the 21<sup>st</sup> Century. Effecting this sort of organizational and cultural change in a department as large as Caltrans, with its ongoing responsibility to provide a safe and effective transportation system for all Californians, is very hard work, to say the least.

Director Dougherty’s statement, from an August 2014 issue of the department’s new Mile Marker publication, succinctly summarizes management’s aspiration to bring Caltrans better into sync with modern practice and policy goals. Stakeholders who criticized Caltrans during our research for the January report have cheered such statements but also wondered whether they would be accompanied by concrete actions. The answer is yes. While Caltrans is a massive organization, and continuous improvement is by definition a process that always continues, we see many positive signs of progress. Some of the most important achievements include:

- Adopting a new mission, vision, and set of goals that move beyond simply improving mobility to encompass a larger suite of outcomes around economy, livability, and environment.
- Championing modern livable, multimodal street design guidance and beginning to adapt Caltrans’ own guidance around some of the concepts gaining currency in the field.
- Establishing teams to develop performance measures, some of which employ measures and goals stated in the department’s previously under-appreciated reports and plans.
- Creating a sustainability program headed by a senior-level executive with impressive technical knowledge and experience in other parts of state government.
- Beginning to tap the wide range of talents and interests within the department to implement CIP-related changes.

These actions all are positive, potentially very powerful initial steps, and both department and agency staff who worked on them deserve credit and thanks. They are also works in progress.

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<sup>1</sup> Malcolm Dougherty, Message from the Caltrans Director, *Mile Marker*, August 2014, <http://www.dot.ca.gov/ctjournal/MileMarker/2014-2/index.html>.

Managers and staff confronted with a need to make change cannot simply drop their day jobs and attend to this new one; the change work comes on top of ongoing responsibilities. In addition, they face those with interest in maintaining the status quo—both inside and outside of the organization.

Predictably, initial work did not proceed precisely as laid out in the January report. In particular, rewriting the department’s mission, vision, goals, and objectives took longer than the report anticipated—the result of a genuine effort to get input and buy-in from department executives—which in turn has led to a perception among many rank and file we spoke to that little was happening. Recent and upcoming outreach efforts on CIP work, including the setting of performance measures, are improving staff engagement. Such engagement will be critical, as one of the chief ongoing challenges will be to drive change through the organization.

#### *Four early action items*

While this document does not go point-by-point through the dozens of recommendations made in the January report, four items called out in that report for early action bear special mention. Caltrans and CalSTA have essentially achieved them all:

**1. Caltrans and CalSTA should develop mission, vision, and goal statements that are fully consistent with state planning and policy goals.**

Caltrans’ previous mission was to simply “improve mobility”—generally construed as auto mobility. That mission, while elegant and well-understood, did not address existing state goals around sustainability, livability, multimodalism, and community and economic development. Through much of 2014, department and agency executives drafted a new mission and vision, along with goals and objectives that go much further in tying Caltrans’ work to overall state goals. While highway mobility objectives remain—e.g., objectives related to improvement in reliability and reduction in traffic delay—these are now balanced with objectives such as reduced per capita vehicle-miles traveled and multimodal system integration. The mission, vision, and goals have been widely distributed at Caltrans and are a key focus of recent and upcoming district visits by the director and CalSTA secretary. The objectives—which, because of their greater specificity, will likely be of more interest to staff and stakeholders—to date have been less publicized. But they are being discussed as teams work to craft performance measures for the department, and have been distributed during a wide-ranging effort to obtain input on the measures. All are listed in the appendix of this report.

**2. Following the release of new mission, vision, and goals, Caltrans and CalSTA should use those statements, as well as the recommendations in this report, to organize teams to develop implementation actions and performance measures.**

The department and agency jointly created five workgroups, with a steering committee overseeing them, and assigned a half-time project manager to coordinate them. The work groups cover 1) performance management, human resource, and innovation issues, 2) alignment of investments and internal resources to goals, 3) strategic partnerships, 4) innovation and flexibility in design, and 5) communications. The groups were established in early 2014, but

most<sup>2</sup> were on hold until midsummer, when the mission, vision, and goals were adopted. Since then they have been working more vigorously on recommendations related to their topic areas.

More recently, the department has created five “goal teams,” which have representation from deeper within the department than do the CIP work groups. The goal teams’ task is to develop performance measures related to the department’s mission, vision, goals, and objectives.

### **3. Caltrans and CalSTA should work to ensure the success of CEQA reform rulemaking set up by SB 743 (2013).**

SB 743 seeks to remove barriers to infill development, deemed desirable by state planning goals, by removing costly mitigation requirements to address potential highway traffic generated by the development. This important reform, removing so-called “level of service” mitigation from environmental review, has drawn national attention, and the January report urged Caltrans to work with the Office of Planning and Research (OPR) to craft a rule that meets the law’s intent. OPR and Caltrans have, in fact, collaborated closely on this work. Unsurprisingly, due to the rule’s groundbreaking nature and the many affected stakeholders, deadlines have been extended and discussions continue. A major remaining issue for Caltrans and OPR is to manage operational challenges, namely where congested exit ramps may back up onto freeways, in a way that is not simply level of service by another name, failing to deliver the relief to infill development as the law directs. The draft rulemaking would also base mitigation on a development’s total vehicle-miles generated, not simply local trips at the driveway, which would both better align the process with environmental concerns and avoid the practice of assessing “the last developer in” for any roadway expansion deemed necessary. Implementation of this new approach deserves continued support and problem-solving from Caltrans and CalSTA. Finally, an element of the rulemaking involves assessing traffic-miles generated by highway expansion. Working out a way to measure and mitigate this effect remains an important issue that needs Caltrans’ cooperation and expertise.

### **4. Caltrans and CalSTA should modernize state transportation design guidance.**

One of Caltrans’ first actions following the January report was to endorse livable, multimodal street design as described in a new guide by the National Association of City Transportation Officials, or NACTO. “California’s transportation system must be multimodal and support bicycles and pedestrians as well as automobiles,” Director Dougherty said at the time. “Caltrans’ endorsement of these innovative street design options is an important part of modernizing our approach to improving transportation for all Californians.”<sup>3</sup> This was an important step, and one that was warmly welcomed by many stakeholders, including NACTO itself, which honored Director Dougherty at its October 2014 conference. The remaining challenge, and one that Caltrans’ design staff are now addressing, is to ensure the department’s guidance and standards of practice point individual decisions to livable, multimodal designs as described in NACTO and elsewhere. Recent revisions to the California Highway Design Manual should be helpful. In fact,

<sup>2</sup> Group 4, dealing with design issues, made good progress even while the new mission materials were in process.

<sup>3</sup> “Caltrans Backs Innovative Street Design Guides to Promote Biking and Walking,” *California Department of Transportation*, April 11, 2014, <http://www.dot.ca.gov/hq/paffairs/news/pressrel/14pr036.htm>.

progress in this area is perhaps the most significant tangible product of the work groups, and Caltrans and CalSTA deserve credit for progress made and support for continuing work.

### *Other achievements*

In advance of this report, the SSTI team asked Caltrans and some stakeholders to provide a few examples of positive actions and outcomes—in addition to the products coming directly out of the CIP work groups—that indicate progress in the modernization effort. SSTI advisers also witnessed some actions first-hand. These examples, occurring in the first months<sup>4</sup> of organizational change, presage even more and better to come. The list here does not cover every relevant action or outcome that has occurred, but it includes both process improvements and tangible outcomes.

Note that while we categorize achievements here for clarity, in reality some actions apply to more than one category.

### *Improved response to community needs and state planning goals*

- As noted in “Four early action items” above, work in this area included a widely welcomed move to endorse livable, multimodal streets as described in the NACTO guide. That endorsement by itself may have triggered some positive actions from Caltrans district staff, including some examples below. However, the NACTO endorsement ran up against real or perceived barriers to implementation in the department’s formal guidance. So, after the endorsement, work turned toward potential revisions needed in that guidance, as well as more outreach to staff on their charge as professionals designing projects to fit their settings. Initial discussions with the SSTI team simply clarified the January report’s intent to focus on surface facilities in metro areas or small towns, not freeways or plainly rural segments (though some staff later in the process pointed out that rural roads can provide important bicycle links). Subsequent work produced some changes to core guidance, the most significant being new text in the Highway Design Manual aimed at designing streets to match desired vehicle speeds—a concept the public might assume to be conventional, but in fact is only now becoming widespread. Caltrans also worked with Assembly member Phil Ting and stakeholders in revising a state statute that previously required local entities to adhere to standards established by Caltrans for locally owned bicycle facilities. The recently chaptered statute (AB 1193) not only codifies separated bicycle lanes (cycle tracks) to complement bike routes, bike lanes, and bike paths as another design option, but it also codifies a process by which local entities can adopt standards other than the Caltrans Highway Design Manual for facilities they own and operate. The department deserves acclaim for taking these steps and for its continuing work on improving design guidance for its own staff and the many localities that employ Caltrans’ guidance.
- While Caltrans has had a “Main Streets guide” and other policy documents supporting complete streets—facilities that support all modes and that provide livable places for homes and businesses—we heard during work on our original report that the department

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<sup>4</sup> Or first years, if dating from the 2012 program review.

sometimes disregarded those policies, frustrating residents and communities. Now District 3 has taken the initiative to develop its own complete streets plan. According to the district, “This plan is intended to offer a framework on which District 3 and our stakeholders can work together in the region to achieve a vision, wherein the state highways can serve both local communities and the greater traveling public. The document also includes a list of identified state highway system segments in the District where complete streets may be most easily achieved. This list is intended to be periodically updated as complete streets concepts are brought forward in local, regional and State planning and project development processes.”<sup>5</sup>

- Matching the statements and guidance are some recent positive outcomes. For example, during a maintenance project to resurface State Route 273 in downtown Redding, District 2 worked with local leaders to restripe the facility, creating a “road diet”—reducing the amount of right-of-way devoted to autos—and other changes, maintaining auto mobility while improving safety for pedestrians and cyclists.

“All they had was an asphalt project and they took the opportunity to take downtown one step closer to excellence,” Shasta Living Streets Director Anne Thomas told the local newspaper. “It’s a great step forward. It makes a huge difference.”<sup>6</sup>

“We feel strongly that creating a safe environment on our downtown streets should be a priority,” district Director John Bulinski said. “We want everyone, pedestrians, bicyclists and motorists to be able to enjoy what the area has to offer and we will continue to work with our partners to make improvements benefitting all modes of transportation.”<sup>7</sup>

- Another case of improved outcomes comes from San Luis Obispo County. There, residents in Santa Margarita had for years asked for traffic calming along State Route 58, which is a main street without any medians, stop signs, or signals. Despite the existence of the department’s Main Streets guide, Caltrans had not supported a locally proposed streetscape plan. However, during a meeting in May in response to a request for a lighted crosswalk, District 5 staff was not only amenable to an “advance lighted crosswalk” but also suggested revisiting the streetscape plan to better accommodate all users, with slower design speeds for autos. The project is likely to be considered for funding in 2015.

Also this year, the San Luis Obispo Council of Governments sought to begin scoping studies for several congestion-relieving projects on U.S. 101. Caltrans District 5 staff not only agreed to move the process along so the work could be considered for programming in 2015, but they also proposed consideration of a recent FHWA report on part-time travel lanes on shoulders. “I hadn’t seen this in a long time,” said Ronald De Carli, COG Executive Director. “District staff was amenable to working on some very tight

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<sup>5</sup> Personal communications, Susan Elkins, Caltrans District 3 deputy director, via Dara Wheeler, Caltrans chief of staff.

<sup>6</sup> Katie Gillespie, “Vision for downtown transportation presented at Cascade Theatre,” *Record Searchlight* (Redding, CA), October 10, 2014. <http://www.redding.com/shaping-our-future/vision-for-downtown-transportation-presented-at-cascade-theatre>.

<sup>7</sup> “New Striping in Downtown Redding,” California Department of Transportation, October 8, 2014. <http://www.dot.ca.gov/dist2/pdf/downtownstriping.pdf>.

deadlines and suggesting solutions for further consideration, some of which were novel.” Even relatively recent modifications to streamline “project initiation documents” hadn’t made this kind of difference, he said. “It seems to be a change in attitude, a move to work together to get things done, and an acknowledgement that we cannot simply focus on capacity but also look at other ways to improve operations.”<sup>8</sup>

### *Improved organizational processes, structure, and capacity*

- The January report found that Caltrans had not always devoted a sufficient share of resources to operations and maintenance that would befit its role as owner-operator of the system. This year District 3 developed a first-in-the state district plan for addressing operations. According to the district, “The Caltrans District 3 ITS/Operational Improvement Plan provides critical guidance to optimize the State Highway System within the District by identifying and managing Intelligent Transportation Systems (ITS) and other operational strategies that yields a very high return on investment and benefit-to-cost. ... District 3 identifies and manages projects by developing an inventory of prioritized projects, a process for continuous updating of the inventory, and using a collaborative approach to integrate the State Highway System projects with ITS projects ... sponsored by cities, counties, transit agencies, and others. The Plan incorporates technology that is here today to provide the best use of limited funds, to get travelers and goods where they need to go safely and on time.”<sup>9</sup>
- The January report cited needs in Caltrans planning capacity as well, and the department is exploring new resources in this area, which stakeholders should support. Meanwhile Caltrans has already rolled out its first statewide Travel Demand Model. Caltrans staff have expressed support for establishing an inter-agency and state-local advisory group to assist with next steps making the model available to state and local stakeholders.
- The report also suggested that Caltrans was having trouble addressing the concept of sustainability. Since January, the department has debated and adopted goals relating to sustainability (see Appendix) and has created a sustainability section headed by a prominent senior staff member who moved to Caltrans from the Air Resources Board, Steven Cliff. The goal team in this area, headed by Dr. Cliff, is wrestling with some of the most interesting and transformative concepts in its work on performance measures, some of them coming out of the long-range and Smart Mobility plans we found had traditionally been disconnected from departmental goal-setting.
- Caltrans has tracked performance in some areas in recent years, but now goal teams are at work crafting a suite of measures that will apply to decision-making throughout the department. When adopted by the CIP steering committee and Caltrans executives, the measures—which will need adjustment over time—should both provide greater alignment of resources and actions with strategic goals as they evolve, as well as accountability for units and individuals.

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<sup>8</sup> Personal communications.

<sup>9</sup> Personal communications, Susan Elkins, Caltrans District 3 deputy director, via Dara Wheeler, Caltrans chief of staff.

The original mid-October 2014 deadline for adopting meaningful performance measures has been extended. Measures need internal and external debate, input, vetting, and buy-in. In the spirit of “better to do it right than quickly,” the goal teams are now asked to provide measures as soon as possible so as to not lose momentum but with sufficient time in the schedule for thoughtful internal identification and discussion of alternatives, and outreach to various external transportation, community, economic, environmental, and political stakeholders. Performance measures related to the cross-cutting concept of sustainability in particular require time, thoughtful discussion, and balancing of diverse desired outcomes, so the extra time is welcome.

Caltrans has requested input on performance measures from all of its own staff and potentially hundreds of stakeholders, receiving more than 1,500 responses, which are being distributed to relevant goal teams for consideration. This is a wise move that will help improve the quality of measures and better fashion them so that they report on information that staff and stakeholders find valuable.

- Caltrans is an old institution, with work processes that have been developed over decades. At the same time customer and stakeholder needs and expectations have evolved, and the technologies required and available to Caltrans to do its work have changed. Modern organizations need to be flexible and nimble. Caltrans has taken two key steps toward improving its work processes: it will be implementing Lean Six Sigma to increase the efficiency of its internal processes and is exploring tools that will enable it to better measure its own performance against that of its peer agencies in other states.

CIP implementation Work Group No. 1 met with representatives from the Governor’s Office of Business and Economic Development (GO-Biz) to discuss the merits of Lean Six Sigma as an appropriate performance improvement method for Caltrans. Many other state government departments in California and elsewhere, and specifically Departments of Transportation in other states, have used Lean and Lean Six Sigma techniques. The work group and the CIP steering committee decided that Caltrans should use Lean Six Sigma for process improvement. Two training programs, one by GO-Biz and another by a Caltrans consultant, will be held late in 2014 and in 2015.

Additionally, the original SSTI report suggested that Caltrans should benchmark its practices against best practices elsewhere. It suggested employing FHWA’s INVEST (Infrastructure Voluntary Evaluation Sustainability Tool) as one means of incorporating sustainability principles in departmental operations against practices elsewhere. The department has explored INVEST, for example by scoring four projects in District 6, as well as other tools.

- The SSTI report recommended that Caltrans continue its efforts to develop an enterprise risk management system as part of improving performance-based decision-making. This was based on the observation that staff can often look for personal zero-risk strategies (risk or error avoidance) that get in the way of effective decision-making and innovation.

As part of its work in this area, Caltrans has identified the top 15 categories of risks, each of which contain several specific threats and opportunities. Caltrans defines a risk as “the effect of uncertainty upon objectives.” The top risks were mapped against the strategic objectives of the Caltrans goal teams. During the August Executive Board meeting, the Board agreed to assign the goal teams the task of identifying appropriate priorities and treatment for the enterprise risks. The Office of Enterprise Risk Management provided a set of specific risks to each Caltrans goal team lead. Risks that are not aligned with the strategic objectives that correspond to the organizational goals, or the performance measures, will have an alternate treatment plan developed by the goal teams.

The Office of Enterprise Risk Management also developed individual risk profiles for each District and Program area, based on risks identified by those groups in the 2013 risk assessment cycle. Caltrans has begun research and development of a training program on enterprise risk management. Looking externally to best practices by Washington DOT, Minnesota DOT, the University of California system, and other public and private partners, Caltrans is developing a risk framework, policy, training program, and ongoing communication plan that is scheduled for completion in spring 2015.

In 2013, Caltrans District 11 piloted a risk management class geared toward helping rank-and-file employees evaluate daily risks encountered on the job. The Caltrans Office of Enterprise Risk Management will build on that beginning, and add web-based and in-person components, along with customized content for technical disciplines, such as design.

- Caltrans’ Audit & Investigations unit assists managers when breaches of ethics are suspected. In 2012, it faced a backlog of cases and sought help from the California Highway Patrol—assistance that did relieve the backlog. In order to build better accountability capacity internally, Caltrans this year sought and received permission to reclassify six auditors as investigators and to hire three additional investigators.

***Improved partnering to achieve department and state goals***

- Caltrans staff have been essential participants in the development new Strategic Growth Council’s Sustainable Communities Program. This cross-cutting program will fund transit-oriented affordable housing and other accessibility enhancement out of the new cap and trade proceeds. Caltrans staff have provided important transportation expertise and are demonstrating an interest in partnering across sectors. Similarly, as described in “Four early action items,” Caltrans staff have engaged constructively in the rulemaking around SB 743, which seeks to reform the California Environmental Quality Act (CEQA) process to avoid disadvantaging desired infill development.
- The January report did not dwell deeply on funding and financing issues, as these were being addressed by CalSTA’s California Transportation Infrastructure Priorities (CTIP) process that was in process. However, Caltrans staff have been central to supporting the CTIP group, conducting relevant research, drafting policy briefs, and advancing concepts of road user charge, pricing/tolling, and State Transportation Improvement Program

(STIP) reform. All three papers are nearly ready for public release and collectively demonstrate Caltrans' leadership in creative solutions to congestion management and transportation funding.

- After decades of holding hundreds of residential properties for a proposed I-710 segment in the eastern suburbs of Los Angeles, Caltrans has stopped pursuing the controversial surface freeway project and is now developing regulations that will allow for the efficient sale of the homes, with priority given to qualifying residents. A new inter-agency agreement has been drafted with sister departments—the Housing and Community Development Department and Housing Finance Agency—to assist Caltrans with proper sales processes. Progress on this long-standing, challenging situation involving land-use and housing issues that had been somewhat foreign to the department, reflects a new willingness of Caltrans to better serve community needs and partner with housing-focused organizations.
- In an example of a project outcome involving successful partnering across multiple goals—mobility, mode, livability, and environment—Caltrans, the San Diego Association of Governments (SANDAG), and others in August obtained unanimous approval of the Coastal Commission for the North Coast Corridor Program. Approval of the \$6.5 billion project, which affects a 27-mile corridor between Oceanside and La Jolla, followed a decade of collaborative work with local partners, resource agencies, and the public. It will add managed freeway lanes, additional rail capacity and bike-ped facilities. In addition it will restore or preserve hundreds of acres of lagoon and coastal habitat. In recommending approval, Coastal Commission staff said the program “includes policies, design/development strategies and implementation measures that are intended to protect coastal resources while maximizing public access throughout the corridor.”<sup>10</sup> According to a press report, “San Diego County Supervisor Greg Cox, a coastal commissioner, called scope of the project ‘mind-boggling,’ and a remarkable example of governments working together.”<sup>11</sup>

### *Improved communications*

- At the outset of CIP discussions, some in Caltrans talked about communications around two audiences: press and legislature. While these are clearly important audiences, there are others as well. To their credit, Caltrans and CalSTA are developing communications plans around a wider variety of stakeholders, including internal staff. One of the goals is “routine conversations between districts and local stakeholders and media.” Some specific actions include a welcome overhaul of the web site and opportunities for district staff to report on their work or issues they face on social media.

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<sup>10</sup> California Coastal Commission San Diego Staff, “North Coast Corridor Project, Addendum to Items W17a, W18a-d, and W19a” (prepared for the Commission Meeting of August 13, 2014), 11.  
<http://documents.coastal.ca.gov/reports/2014/8/W17a-s-8-2014.pdf>.

<sup>11</sup> Chris Nichols, “I-5 expansion gets big green light,” *U-T San Diego*, August 13, 2014.  
<http://www.utsandiego.com/news/2014/aug/13/I-5-expansion-widening-north-county-caltrans/>.

While not part of formal communications plans, some other actions deserve note in this area:

- The department has recently commenced an effort to seek input from all staff and hundreds of stakeholders on development of performance measures. Assuming such input is thoughtfully considered, this move helps engage the staff and stakeholders—some of whom have wondered what became of the January report—as well as produce useful material for the teams constructing the measures.
  - Secretary Brian Kelly and Director Dougherty are traveling the state to visit with district staff about the new mission, vision, and goals, and the modernization effort. This is another key opportunity to show that change is real, and that staff can help implement it.
- Like most DOTs, Caltrans has long had a dashboard of system performance measures. These, however, cover neither organizational performance nor the breadth of outcomes related to state planning goals. As discussed elsewhere, the new suite of measures is under development and should be more useful in managing Caltrans and reporting its work. So Caltrans’ performance journalism—beyond publishing a dashboard—cannot get fully under way until the measures are set.

That said, the department has moved forward. Caltrans and CalSTA staff visited the Washington DOT, whose “Gray Notebook” is a model of transportation performance reportage. Caltrans has published two editions of its Mile Marker, a publication planned before the January report was delivered, but which has responded in its content to issues raised in that report. The Mile Marker contains the dashboard and will eventually be the venue for reporting on the wider suite of performance measures. The department has added a staffer who will assist with production of the Mile Marker.

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This list, again, while impressive, is not exhaustive; much more is happening and will soon happen—including development of a new strategic plan with new performance measures—that promises to modernize Caltrans and bring it into better alignment with state goals and public needs. Nor does this account imply that CIP’s work is over. The next section addresses some of the pressing implementation needs we see. What the list does say is that early commitments to change are prompting action and real improvements.

## **Recommendations**

With performance measures and a strategic plan pending, much of the CIP and related change effort is in considerable flux. In addition, many initiatives begun in recent months are on a solid trajectory and need little in the way of advice from SSTI; an example is the effort to overcome Caltrans' former reluctance to address sustainability, now being handled by a new sustainability initiative. In this section we cannot address every conceivable detail of the coming work, nor do we want to provide recommendations where none are needed. Rather, we seek to provide comments and action items that address clear needs we have observed or that we can reasonably predict will occur in coming months. We deal first with process involved in managing and continuing the CIP and then address issues related to departmental management and practice.

### *Maintaining momentum with CIP*

1. **Caltrans and CalSTA should redouble efforts to get staff buy-in and help in making change.** In recent months, we heard from many staff members that they were unaware of CIP activities after the receipt of the January report. In other cases we heard staffers comment that their supervisors had been reluctant to let them participate in CIP activities, goal teams, or other change-related activities. The net effect on many in the organization is to see the effort as not delivering on hopes for improvement and transformation. Developing internal communications and opportunities for employees to contribute to the CIP does not come easily in a department that has traditionally been siloed and top-down. In the days leading up to this report, there were good signs that this situation is improving. The department's request for comments on performance measures was available for all employees, for example, and Secretary Kelly and Director Dougherty were visiting district offices to describe the new direction and take employee feedback. The department and agency should take stock after employee comments are digested and the district tour is completed or well under way in order to see how these efforts are faring and what other means of fostering internal communication and collaboration are needed. The Kelly-Dougherty tour, while important in the short run, is not a sustainable way of communicating and collaborating, as both leaders are already oversubscribed. Ultimately it is up to the 19,000 Caltrans staff to affect lasting, impactful change.
2. **Caltrans and CalSTA should ensure that the new performance measures and strategic plan will faithfully implement the new mission, vision, and goals and the recommendations from the January report, to which both entities agreed.** One of the critical elements from the January report is that the measures and plan should also implement goals and practices laid out in the stakeholder-vetted, long-range California Transportation Plan and the Caltrans-sponsored Smart Mobility 2010 documents. When the draft measures and plan emerge, it will be important to do a crosswalk between all of the documents to ensure alignment. Performing such an analysis would be an appropriate task for CalSTA, given its role in high-level departmental oversight.
3. **Caltrans and CalSTA should continue to convene work groups and goal teams for the foreseeable future.** Aside from work group No. 4, which dug in to its work early,

most of the CIP work groups went slowly until about July, when the new mission was adopted, and so have only been meeting in earnest for a few months. Work group No. 1, for example, has much work to do around performance management and other organizational improvements, as these are all in process. While the groups may not continue forever, and their roles should adapt as the strategic plan develops, in this time of concerted change, they offer a venue for continued engagement between Caltrans and CalSTA. Likewise, from our experience sitting in on some goal teams, the groups offer unusual opportunities for collaboration and silo-busting, and we see a role for them going forward as questions and challenges surrounding reform implementation arise. As Caltrans evolves into a more performance-driven, collaborative, innovative organization, both the work groups and goal teams may no longer be needed, but in this interim time they seem to satisfy important needs.

4. **Caltrans and CalSTA should establish a timeline, with mutual check-in or reporting expectations, for continued implementation of the CIP.** Along with continued convening of work groups and goal teams, such a plan—which may be incorporated in the strategic plan—will keep CalSTA engaged, and will help set expectations for progress.

*Continuing to improve the organization*

5. **Caltrans should establish a specific timeline for development and implementation of the performance management and reporting system.** While drafting of performance measures is well under way, the system by which those measures will be assigned to work units and individuals and how they will report on their performance are still evolving. CIP work group No. 1 has indicated it will meet with Caltrans' Office of Strategic Management, the organizational unit within the department that has been charged with compiling and reporting performance metrics, to review the system it is proposing.
6. **To achieve intended improvements in accountability and ethics, recently completed handbooks should be distributed as soon as possible so their use is incorporated into the everyday management of the department.**
7. **Caltrans should continue to work with the INVEST tool for improving sustainable transportation decisions and practices.** The department has experimented with the tool with good results, particularly in the section of the tool dealing with project development. At the same time it found criteria it would like to modify to better match California law and policy. FHWA is willing to perform that modification. What is needed now is a go-ahead for Caltrans staff to expend modest effort in that customization, and then to begin wider use of the tool.
8. **Caltrans should continue and deepen its work in managing risk.** A particular need is to ensure that the work does not stop with enterprise-scale risks, such as funding shortfalls or reputational damage, but also addresses a culture of reasonable risk-taking by individuals and work units, a major issue essential to innovation and efficient

functioning highlighted in the January report. Senior management tends to conflate these two issues, pointing to the enterprise risk management initiative as the solution to both; in reality these are related but separate issues. The goal teams and CIP work group No. 1, as well as staff assigned to enterprise risk management, all have roles to play in developing an environment of appropriate risk. With regard to the staff, it is likely that just three dedicated employees is not enough to work on risk management for an organization the size of Caltrans.

9. **Caltrans should work with California State University, Sacramento, to ensure that its manager and leadership training programs embrace the new mission, vision, and goals, as well as performance-based management and Lean Six Sigma.** After a hiatus, the CSUS trainings have resumed, and Caltrans should be applauded for that. To date, however, it does not appear that the curriculum is being updated to match Caltrans' new stance on policy and practice. The department has also developed workforce development strategies for the major occupational areas in the department. The critical learning objectives identified in the occupational strategies need to include the knowledge, skills, and abilities needed to fully address the new activities driven by the strategic objectives and related performance measures.

*Continuing to improve practice and outcomes*

10. **Caltrans should continue to refine its design guidance to facilitate livability, multimodal access, and safety.** Actions taken to date—including generally embracing livable streets and publishing new guidance language stating that roadway design speeds should be consistent with desired operating speeds—have already begun to pay dividends. But the job is not complete. SSTI advisers took part in discussions that seemed to conclude that amending the department manuals for flexibility to design for slower speeds, without resorting to the exception process, would both be welcomed by design staff and would not impose liability issues. Because the Caltrans guides are used by many local governments, such guidance would also positively affect many locally owned roads and streets. A key example is lane width. Current guidance requires or recommends highway-style 12-foot lanes, while the American Association of State Highway and Transportation Officials (AASHTO), NACTO, and other guidance all permit or recommend narrower lanes, which both tend to slow traffic and also may free up right-of-way to be devoted to walking, biking, or business use. There is some sentiment at Caltrans that existing guides can provide sufficient design flexibility if engineers are encouraged to seek design exceptions and if the historically problematic exception process is improved. Improving the exception process is a good step, which we applaud, but we argue that staff should not be required to seek exceptions to do the right thing and point also to the wide use of the HDM outside of Caltrans, where the department's internal process improvements do not matter. We urge the department to consider more flexibility in the standards themselves. A related issue is guidance on desired speeds. Caltrans' speed table now begins at 30 mph and goes up, while many urban and suburban areas—as well as the prima facie statutory speed for California in some cases—are lower, sometimes substantially. New York, in its recent move to set default speed limits at 25

mph, cited research that shows pedestrian crashes at that speed are twice as likely to be survivable as those at 30 mph.<sup>12</sup>

- 11. Caltrans, with CalSTA and the California Transportation Commission (CTC) and other stakeholders, should continue efforts to reform funding processes for new highway capacity.** Our January report suggested that the CTC be given the ability to approve or reject individual projects from the regions. This idea, while common in other states, did not go over well. Yet the problem remains that county-funded projects on the state system do not cover maintenance, operations or eventual rebuilding costs, nor do county-funded projects—particularly those conceived years or decades ago—necessarily comport with current state policy goals around livability, multimodalism, environment, and community development. We hope the CTIP process will provide thoughtful policy solutions. In the meantime, Caltrans deserves support as it works to influence project development on the state system in pursuit of state goals.
- 12. Caltrans executive management should recognize the importance of taking a disciplined approach to managing and using data, and consider a knowledge management program tailored to the department’s size and complexity.** During the course of the summer, the SSTI had a simple question: How many lane-miles of Caltrans’ system lay within metropolitan areas? The team requested GIS shape files, conventional pieces of data used to display and analyze spatial information, so they could be placed in a map. After many calls it turned out that Caltrans did not have GIS files of its system, despite planners’ and research staff’s clear understanding of the utility of such a system, and despite Caltrans having participated in a pooled-fund study that produced Utah DOT’s UPLAN—a GIS system that not only holds all of the DOT’s system, with detailed attributes, in one web-accessible platform, but also holds GIS files from resource agencies, transit agencies, and other stakeholders. Managing data better is not always something Caltrans executives see as a critical opportunity. Asked about this issue, some of them said Caltrans could not manage so much spatial data because the state is big and complicated, with, for example, hundreds of transit systems. In fact, that is the very reason Caltrans needs better data management. If the system were simple, it could be managed simply, but it is not. Asset management, as well as faster and more effective planning and environmental reviews, depends on modern data systems, and Caltrans appears to lack these.

In contrast, many Departments of Transportation are beginning to manage their data and IT resources as valuable enterprise assets that support their overall missions, much like their infrastructure, and some have created knowledge management positions within their organizations. The Transportation Research Board has created a Task Force on Knowledge Management (AB010T) of which Caltrans’ Chief Risk and Ethics Officer is a member. The National Cooperative Highway Research Program recently (May 2014) published the results of Scan 12-04 Advances in Transportation Agency Knowledge Management (the scan team was chaired by John Halikowski, Director of the Arizona DOT, and had six members from state DOTs). Caltrans should engage in these efforts

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<sup>12</sup> City of New York, “FAQ’s – Frequently Asked Questions,” *Vision Zero*.  
<http://www.nyc.gov/html/visionzero/pdf/library/25-MPH-FAQ.pdf>.

and organize itself to handle data better. CalSTA should support reasonable requests for resources to make this change.

**13. Caltrans should review staffing to make sure new and important ongoing activities have the resources required.** While one of the goals of the CIP process is to improve collaboration and goal-alignment generally, some functions require dedicated staff. So while CalSTA and Caltrans are to be commended for creating a high-level sustainability position, this initiative has only one other staff member. Other areas that have three or fewer staff include enterprise risk management, Smart Mobility, and adverse actions. Together these three areas, plus sustainability, have fewer than a dozen staff in an organization of 19,000. And other staff notice this. Managers, for example, have told us they want more assistance on adverse actions—critically including coaching before any problems arise, so that managers can act appropriately when the time comes—but that the small staff does not have sufficient resources to provide such help. In the past, both Caltrans management and state budgeting staff have tended to see these sorts of functions—as well as even more core functions such as planning and operations—as peripheral and difficult to justify with zero-based budgeting. In short, just as with capital investments mentioned in No. 11 above, the effort to match organization resources to modern needs remains a major challenge. Some recent moves, including beefing up the investigations staff, reflect a more thoughtful approach. Current Caltrans management is well aware of the need to evolve the workforce. It deserves support in doing so.

**14. Caltrans should set a specific timeline for presenting its proposed approach to asset management to its executive board and CalSTA.** The overall approach should incorporate internal and external stakeholder values, present asset management issues in a transparent and understandable way, and should include a description of how the department will handle data collection, data management, analysis, and decision making.

Caltrans has made progress in developing an asset management strategy. Staff have held phone conferences with state DOTs recognized as being national leaders in asset management, and they have retained a nationally known expert on value-based decision making to help them define an overarching approach to asset management. Caltrans has committed to developing an asset management plan in 2016 for the State Highway Operations and Protection Program (SHOPP), which is rapidly approaching, as are federal requirements from MAP-21, the federal transportation bill. The governor signed SB 486 to adopt asset management as a statutory requirement. The quality of the system and its import in decision making remain key variables that will determine whether the department “does” asset management to meet a requirement or embraces it as a core way of doing business. At the moment, deficits in the way the department handles data make effective asset management a challenge.

**15. Caltrans should apply Lean tools critically to examine some of its core decision processes to ensure their effectiveness and relevance to 21<sup>st</sup> Century transportation policy and stakeholder needs and expectations.** One of the themes in the January report was that a stronger planning program and a strategy for using planning information in agency decision-making would provide more direction to Caltrans’ outcomes. The report,

in particular, pointed out the important role that Smart Mobility 2010 and its corresponding principles could play in bringing new direction to Caltrans' investment decisions. Caltrans has established a Sustainable Mobility Program in the Division of Planning to help implement Smart Mobility 2010 and the California Transportation Plan (CTP) 2040, with a corresponding statutory link between project selection and the CTP 2040. Perhaps more importantly, at least some of the goal teams are considering performance measures out of Smart Mobility and CTP 2040 for use in the department's suite of measures to be used on performance management. All these efforts can provide better information for decision-making. However, the process by which decisions are made must be up-to-date, focused, and structured to achieve the appropriate outcomes. Caltrans has determined that Lean Six Sigma is a tool it will use for continuous improvement throughout the department. Lean tools such as Value Stream Mapping (VSM) could be applied to examine the manner in which projects are selected for development. For example, VSM can be used to clearly identify how internal and external stakeholders define quality in the outcomes of the Project Initiation Document (PID) decision process in terms of information provided, policy and planning consistency, degree of scoping, appropriate performance targets/desired outcomes, etc. Then VSM can be used to examine each step in the decision process to ensure the right policy and technical information is available at the right time; the right people are involved; and only the analysis steps, resources, and time needed are actually used and add value to the decisions.

**16. Caltrans should deepen its work to be a leader in multimodalism.** In his Mile Marker quote cited at the beginning of this report, Director Dougherty laudably restates the department's aspirations in this area, and there are good signs of progress, including very significant moves toward more pedestrian-friendly roadway designs and the department's work to make the state's intercity rail network one of the best in the nation. However, a variety of conversations over recent months make clear there is more to be done. For example, Caltrans staff often talk about transit as if the department is simply a pass-through for funding to providers—this despite good work undertaken by Caltrans headquarters and districts circa 2000 to triple transit ridership. This work seems to have been set aside in intervening years; even suggestions about mapping transit routes against the state highway system, so the two can be developed cooperatively, have brought protests that such mapping would be too complicated. Likewise, the department's design guidance is too often viewed by some staff only as internally focused; local governments can make their own rules, they say. This view both abdicates the leadership role described in the quote, and is unrealistic as well since most local governments lack the resources to develop their own design guides. Caltrans' work on design can and should intentionally go beyond consideration of its own system to help lead all stakeholders of the roadway network. Finally, the new Active Transportation Program, a hugely beneficial effort by the state to fund sustainable transportation, is another place where stakeholders who have spoken with us have had questions about Caltrans' commitment and ability. It is another opportunity to prove doubters wrong by not just moving money to projects, but by showing progress in improving access to destinations for pedestrians and cyclists.

**17. Caltrans should continue its work to improve “performance journalism.”** This term, borrowed from the Washington State DOT, implies a sophisticated and honest system of tracking progress and challenges for external stakeholders and staff. Too often in discussions media outreach has been described in terms of image-burnishing public relations. While telling the Caltrans story is a worthy project, and recent social media videos on the department’s praiseworthy response to the Napa earthquake and other activities are worth continuing, these should not be confused with performance journalism. Transportation is replete with data—though not always the right data—but often short on telling information. The performance journalist should fill that gap. Caltrans is working in this area and has added one staff member, which is a start. The upcoming adoption of performance measures will put Caltrans’ performance journalism on center stage.

## **Acronyms and Abbreviations**

AASHTO – American Association of State Highway and Transportation Officials

CalSTA – California State Transportation Agency

Caltrans – California Department of Transportation

CEQA – California Environmental Quality Act

CIP – Caltrans Improvement Project

CTC – California Transportation Commission

CTIP – California Transportation Infrastructure Priorities

CTP – California Transportation Plan

DOT – Department of Transportation

GO-Biz – Governor’s Office of Business and Economic Development

INVEST – Infrastructure Voluntary Evaluation Sustainability Tool

ITS – Intelligent Transportation Systems

OPR – Office of Planning and Research

PID – Project Initiation Document

SANDAG – San Diego Association of Governments

SHOPP – State Highway Operations and Protection Program

SSTI – State Smart Transportation Initiative

STIP – State Transportation Improvement Program

VSM – Value Stream Mapping

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## Appendix

2014 Caltrans Goals and Objectives	
<b>Goal: Safety and Health</b>	
Goal Intent	Strategic Objectives
Provide a safe transportation system for workers and users and promote health through active transportation and reduced pollution in communities.	Zero worker fatalities.
	Reduce employee injury rates.
	Design facilities for the safety of all users, including the consideration of appropriate vehicle speeds.
	Reduce user fatalities and injuries.
	Adopt a “Toward Zero Deaths” practice for the transportation system.
	Increase mode share for transit and active transportation.
	Reduce transportation system emissions.
<b>Goal: Stewardship and Efficiency</b>	
Goal Intent	Strategic Objectives
Money counts. Responsibly manage California’s transportation-related assets.	Embrace a “Fix-it-First” philosophy to keep assets in a state of good repair.
	Effectively manage taxpayer funds.
	Maximize the use of available financial resources.
	Efficiently deliver projects and services on time and on budget.
	Improve and maintain pavement condition.
	Improve and maintain bridge health.
	Implement a sound Transportation Asset Management plan to maximize investment effectiveness.
	Accompany new investments with Life Cycle Cost analysis.
	Employ “best practices” to continuously improve Caltrans facilities, operations and services.

Goal: Sustainability, Livability and Economy	
Goal Intent	Strategic Objectives
Make long-lasting, smart mobility decisions that improve the environment, support a vibrant economy, and build communities, not sprawl.	Target investment to California's trade corridors.
	Align transportation investments and operations with state transportation, environmental and economic goals and regional strategies for sustainable communities.
	Reduce transportation-related greenhouse gas emissions by providing alternatives to single occupant car trips and supporting efficient land-use decisions that reduce per capita vehicle miles traveled.
	Build climate change resiliency into planning and investment.
	Improve water quality and reduce water usage.
	Increase recycling efforts.
	Improve energy efficiency.
	Monitor and mitigate highway impacts on their natural surroundings (e.g., improve quality of fish passage and wildlife crossings).
	Improve transit and transit-oriented development to increase transportation-access equity.
Comply with environmental permits for construction and maintenance activities.	
Goal: System Performance	
Goal Intent	Strategic Objectives
Utilize leadership, collaboration and strategic partnerships to develop an integrated transportation system that provides reliable and accessible mobility for travelers.	Improve travel time reliability for all modes of travel.
	Reduce peak period travel times and delay for all modes through intelligent transportation systems, operational strategies, demand management and land use/transportation integration.
	Integrate transportation design with land use to increase person throughput.
	Improve collaborative partnerships with agencies, industries, municipalities and tribal governments.
	Improve integration and operation of the transportation system for all modes to provide a true network for system users.
	Increase the number of complete street features on state highways that are also local streets in urban, suburban, and small town settings.

	Develop integrated corridor management strategies for those of highest statewide significance.
	Assign ownership of transportation facilities, including roads and streets, to the appropriate level of government.

Goal: Organizational Excellence	
Goal Intent	Strategic Objectives
Be a national leader in delivering quality service through excellent employee performance, public communication, and accountability.	Encourage innovation and creativity from the department’s workforce.
	Continuously increase customer satisfaction.
	Implement a management system to ensure staff performance and resources are aligned with department strategic and state goals.
	Employ Lean 6-Sigma to reduce waste in department operations and decision processes and to ensure resources are used effectively.
	Build on the foundation of the Mile Marker to improve performance journalism.
	Properly identify, manage, and communicate risks, and make intelligent decisions based on that analysis rather than allowing risk aversion to impede decision making.
	Improve employee development and management training, succession planning, and national engagement with the transportation research and policy communities.
	Maintain and enhance a culture that promotes ethical behaviors and risk-conscious decisions for all Caltrans employees.
	Require programs to institutionalize effective workforce planning efforts and implement identified strategies, including leadership development.
	Improve external and internal communication to better demonstrate professionalism and service levels to the public and other stakeholders, and to positively affect employee morale.
Promote a healthy work environment for employees.	